

ABSTRACT

The invention provides an electrode which can improve cycle characteristics by reducing structural destruction of an active material layer and reaction between the active material layer and an electrolyte according to charge and discharge, and a battery using it. A current collector made of a metal material containing a metal element which does not form an intermetallic compound with Li, such as Cu, Ni, Ti, Fe, and Cr; the active material layer containing Si, Ge, or an alloy thereof; and a thin film layer made of a metal material containing at least one of metal elements and metalloid elements which can make a solid solution with lithium and do not form an intermetallic compound with lithium, e.g. Cu, Ni are layered in this order. The current collector is alloyed with the active material layer, and the thin film layer is alloyed with the active material layer.